

What is claimed is:

1. An inverter system equipped with an inverter,
said inverter comprising:
 - 5 an upper ECU operating under electric supply of a low-voltage battery;
 - a communication microcomputer receiving an instruction from said upper ECU;
 - 10 a motor control microcomputer receiving an instruction from said communication microcomputer;
 - a gate driving circuit controlled by said motor control microcomputer; and
 - 15 a switching element driven by said gate driving circuit for converting a direct current of a high-voltage battery into an alternating current to drive a motor,
- wherein
said upper ECU and said communication microcomputer are connected to each other via high-speed communication means to transmit instructions,
 - 20 said communication microcomputer and said motor control microcomputer are connected to each other via low-speed communication means to transmit instructions,
 - an insulation boundary is defined between said communication microcomputer and said motor control microcomputer to isolate a low-voltage side electric component receiving electric power of said low-voltage battery from a high-voltage side electric component receiving electric power of said high-voltage battery, and
 - 25 insulation signal transmitting means is disposed on said insulation boundary to assure insulation and transmit signals.

2. The inverter system in accordance with claim 1, wherein said motor drives an electrically-driven compressor for an automotive vehicle.

3. The inverter system in accordance with claim 1, wherein said 5 high-speed communication means has a communication speed exceeding 20 kbps.

4. The inverter system in accordance with claim 3, wherein said high-speed communication means is a CAN protocol.